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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,433

12/05/2005

Kenichi Fukuoka

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EXAMINER

MACCHIAROLO, PETER J

ART UNIT

PAPER NUMBER

2879

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,433	Applicant(s) FUKUOKA ET AL.	
	Examiner PETER J. MACCHIAROLO	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/05/2008, 06/20/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

The reply filed on 10/20/2008 consists of changes to the claims, and further, the reply consists of remarks related to the prior rejection of claims in the previous Office Action. The above have been entered and considered. However, pending claims 1, 3-6 and 10 are not allowable as explained below.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 06/20/2008 and 09/05/2008 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Rejections - 35 USC § 112

The following are quotations of the first and second paragraphs of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-6 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Example

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Applicant refers to in the footnote of page 4 of the remarks only enables one skilled in the art to use the material Alq₃, not any of the various Alq complexes as Applicant contends (see at least the formula for “Alq” on page 15 of the published specification, which is actually Alq₃).

Therefore, the instant disclosure is not enabling for all of the various Alq complexes.

Claims 1, 3-6 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the claim recites, “the electron mobility of the electron injecting layer being greater than *the electron mobility of (8-quinolinolato)aluminum complex.*” This clause is not clear.

Firstly, there is lack of antecedent basis for this term.

Secondly, to which complex of Alq is referred? There are many different complexes of Alq all having different electron mobility values. Evidence of which can be found in at least USPN 6893743 to Sato et al.

Thirdly, even if a specific Alq complex is read into the claim (i.e. Alq₃) the electron mobility is dependent on the thickness of the layer and the applied voltage.

The instant claims do not recite any specific absolute value for the electron mobility, and the electron mobility cannot be ascertained. Consequently the structural characteristics recited in the clause (specifically the related electron mobilities) cannot be ascertained. Therefore, for the purpose of examination, the examiner reads the claim as follows:

“Claim 1. An organic electroluminescent device comprising: an emitting layer between a pair of electrodes that are an anode and a cathode, an

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electron injecting layer and an electron-injection-suppressing layer between the cathode and the emitting layer, electron-injecting-suppressing layer regulating the amount of electrons or holes supplied to the emitting layer, and the electron mobility of the electron-injection-suppressing layer is smaller than the electron mobility of the electron injecting layer .”

The remaining claims are rejected due to their dependency.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by previously cited Fukuyama (USPGPUB 20010005021: “Fukuyama”).

Regarding claim 1, Fukuyama discloses at least in figure 1 and paragraphs 32 and 56 an organic electroluminescent device comprising: an emitting layer (5) between a pair of electrodes that are an anode (2) and a cathode (8), an electron injecting layer (7) and an electron-injection-suppressing layer (9) between the cathode (8) and the emitting layer (5), electron-injecting-suppressing layer (9) regulating the amount of electrons or holes supplied to the emitting layer, and the electron mobility of the electron-injection-suppressing layer (9) is smaller than the electron mobility of the electron injecting layer (7, see also paragraph 32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over previously cited Fukuyama in view of Mori et al. (USPN 5281489; “Mori”).

Regarding claim 3, Fukuyama is silent to the affinity level of the different layers.

However, Mori teaches that adjusting the affinity levels as recited will allow for a very efficient light emitting device which can move and donate holes extremely easily.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fukuyama with the recited affinity level relationships to allow for a more efficient light emitting device.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuyama in view of previously cited Kawamura (JP 2000-186094; “Kawamura”).

Regarding claims 4-6, Fukuyama discloses that the electron injecting-suppressing layer includes material from the electron injection layer, and that any material may be used for the electron injection layer, but is silent to the electron injecting layer or electron injection suppressing layer comprising a nitrogen-containing cyclic compound.

However, Kawamura teaches that this electron injection layer compound reduces the weight and power consumption of an OLED device. Further, one of ordinary skill would realize

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that the material used in the electron injection layer must also be used in the electron injection-suppressing layer as disclosed by Fukuyama.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fukuyama with the electron injection layer of Kawamura to reduce the weight and power consumption of an OLED device.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuyama in view of Sato et al. (USPN 6893743; “Sato”)

Regarding claim 10, Fukuyama is silent to the electron injecting layer comprising the recited compound.

However, Sato teaches that a layer to intensify light emission of an organic EL device can have the recited formula.

Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the device of Fukuyama with the electron injecting layer comprising the recited formula to intensify the light emission from the device.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

/Peter Macchiarolo/
Primary Examiner, Art Unit 2879
(571) 272-2375